

Remarks

I. Status of the Claims

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 42 and 44-60 are pending in the application, with claims 42 and 52 being the independent claims. Claim 43 is sought to be cancelled without prejudice to or disclaimer of the subject matter therein. Claims 42, 44, 47, 49, 50, 52, 56, 58, and 59 are sought to be amended. Support for the amendments to claim 42 may be found at, *e.g.*, page 2, lines 16-19 and 25-26, and in Example 6, page 21, line 17 to page 22, line 16. Support for the amendment to claim 44 may be found at, *e.g.*, page 2, lines 26-27. Support for the amendments to claim 47 may be found at, *e.g.*, page 3, lines 3-4. Support for the amendment to claim 49 may be found at, *e.g.*, page 3, lines 3-16. Support for the amendment to claims 50 and 59 may be found at, *e.g.*, page 9, line 5. Support for the amendment to claim 52 may be found in, *e.g.*, Example 6, page 21, line 17 to page 22, line 16. Support for the amendment to claim 56 may be found at, *e.g.*, page 4, lines 1-2. Support for the amendment to claim 58 may be found at, *e.g.*, page 4, lines 1-14. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendments and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

II. Summary of the Office Action

In the Office Action dated May 15, 2009, the Examiner has withdrawn the rejection of claims 42-47, 49-56, and 58-60 under 35 U.S.C. § 112, second paragraph, and the rejection of claims 42-45, 47, 51-53, and 60 under 35 U.S.C. § 103(a). The Examiner has, however, added new objections and new rejections under 35 U.S.C. §§ 112, second paragraph, 102(e), (a), and 103(a) and on the grounds of nonstatutory obviousness-type double patenting. Applicants respectfully offer the following remarks concerning each of these elements of the Office Action.

III. Objection to the Claims

A. Claims 42 and 56

At pages 2-3 of the Office Action, claims 42 and 56 have been objected to because the term "NgR1" allegedly "needs to be spelled out at the first occurrence." *See* Office Action, pages 2-3. First, Applicants would like to respectfully point out that claim 42 does not use the term NgR1 and does not recite ". . . wherein the soluble Nogo receptor-1 polypeptide is soluble form of a mammalian NgR1," as alleged by the Examiner. *Id.* at page 3, paragraph 4. Therefore, Applicants respectfully assert that the objection to claim 42 lacks merit. Nevertheless, in the event that the Examiner intends or intended to apply such an objection to claim 47, which recites "wherein the soluble Nogo receptor-1 polypeptide is soluble form of a mammalian NgR1," then Applicants respectfully disagree. However, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have amended claim 47 to recite the term "NgR1" in parentheses following the occurrence of "Nogo receptor-1."

Next, Applicants would like to respectfully point out that claim 56 does not recite ". . . wherein the soluble Nogo receptor-1 polypeptide is soluble form of a mammalian NgR1." *Id.* Rather, the wherein clause of claim 56 recites "wherein the soluble Nogo receptor-1 polypeptide comprises a soluble form of a mammalian NgR1." Further, Applicants respectfully disagree with the objection as applied to claim 56. However, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have amended claim 56 to recite the term "NgR1" in parentheses following the occurrence of "Nogo receptor-1." Thus, Applicants respectfully assert that the objection to claims 47 and 56 has been overcome. Reconsideration and withdrawal of the objection are respectfully requested.

B. Claims 49 and 58

At pages 2-3 of the Office Action, claims 49 and 58 have been objected to because claims 49 and 58 allegedly depend from withdrawn claims. *See* Office Action at page 3, paragraphs 5 and 6. Applicants respectfully disagree. However, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have amended claims 49 and 58 to depend from claims 47 and 56, respectively. Thus, Applicants respectfully assert that the objection to claims 49 and 58 has been overcome. Reconsideration and withdrawal of the objection are respectfully requested.

IV. The Rejection Under 35 U.S.C. § 112, Second Paragraph, is Traversed

At pages 4-5 of the Office Action, claims 50 and 59 have been rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. *See* Office Action at pages 4-5. In particular, the Examiner has asserted that the term "moiety" is indefinite

because it is allegedly "unclear what is encompassed within 'a fusion moiety.'" *Id.* at page 4, paragraphs 9 and 10. Applicants respectfully disagree. However, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have amended claims 50 and 59 to recite "wherein the soluble form of a mammalian NgR1 further comprises an immunoglobulin constant domain." Thus, Applicants respectfully assert that this amendment overcomes the rejection of claims 50 and 59. Reconsideration and withdrawal of the rejection are respectfully requested.

V. The Rejections over Lee et al. Under 35 U.S.C. § 102(e) and (a) Are Traversed

At pages 5-6 and 8 of the Office Action, claims 42-47, 49-50, 52-56, and 58-59 have been rejected under 35 U.S.C. § 102(e) and (a) as allegedly being anticipated by Lee *et al.* (U.S. Pub. No. 2005/0271655) (hereinafter "Lee"). *See* Office Action, pages 5-6 and 8. The Examiner has alleged, *inter alia*, that because the claims do not define the patient population, "anybody being administered the soluble Nogo-receptor polypeptide would necessarily have reduction in A β peptide levels." *Id.* at pages 5-6, paragraph 13. The Examiner has further alleged that "[t]he claims are drawn to a method of reducing the symptoms, not treating the disease." *Id.* Applicants respectfully disagree.

However, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have amended claims 42 and 52 to recite that the methods comprise "administering a therapeutically effective amount of a soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A β peptide" or "in need of reduction of plaque deposits," respectively. Support for the addition of the phrases "to

a patient in need of reduced levels of A β peptide" or "to a patient in need of reduction of plaque deposits," may be found in the specification in, *e.g.*, Example 6. The mice used in Example 6 were APPsw/PSEN-1(DeltaE9) double transgenic mice which are predisposed to over-production of A β peptide and increased deposition of A β peptide into amyloid plaques and were thus, in need of treatment to reduce the production of A β peptide and decrease deposition of A β peptide into amyloid plaques. *See* specification, page 21, line 17, to page 22, line 16. Further, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have also amended claim 42 to recite a "method of treating a disease, disorder, or condition."

Therefore, contrary to the Examiner's assertions, claims 42 and 52, as currently presented, are drawn to methods of treating a disease, disorder, or condition by reducing the levels of A β peptide in a mammalian brain or to methods of treating a disease, disorder, or condition associated with plaques of A β peptide in a mammalian brain. Further, claims 42 and 52, as currently presented, do define the patient population, as they are drawn to methods of treating the disease, disorder, or condition comprising administering a therapeutically effective amount of a soluble Nogo receptor-1 polypeptide *to a patient in need of reduced levels of A β peptide or to a patient in need of reduction of plaque deposits.* Lee does not expressly or inherently disclose the administration of a soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A β peptide or to a patient in need of reduction of plaque deposits.

Under 35 U.S.C. § 102, a claim can only be anticipated if each and every element in the claim is expressly or inherently disclosed in a single prior art reference. *See* *Kalman v. Kimberly Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983), *cert. denied*, 465

U.S. 1026 (1984). As discussed above, Lee does not expressly or inherently disclose every element of the presently claimed invention. Hence, under *Kalman*, this reference cannot support a rejection under 35 U.S.C. § 102(e) and (a). Reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(e) and (a) over Lee are therefore respectfully requested.

V. The Rejections over Strittmatter Under 35 U.S.C. § 102(e) and (a) Are Traversed

At pages 7-9 of the Office Action, claims 42-47, 50-56, and 59-60 have been rejected under 35 U.S.C. § 102(e) and (a) as allegedly being anticipated by Strittmatter (U.S. Pub. No. 2002/0077295) (hereinafter "Strittmatter"). *See* Office Action, pages 7-9. As discussed above, the Examiner has alleged, *inter alia*, that because the claims do not define the patient population, "any patient being administered an effective amount of a soluble Nogo-receptor polypeptide would inherently reduce the levels of A β peptide." *Id.* at pages 7-8, paragraph 15. The Examiner has further alleged that "[t]he claims are drawn to reducing the symptoms, not the disease." *Id.* Applicants respectfully disagree. However, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have amended claims 42 and 52 to recite that the methods comprise "administering a therapeutically effective amount of a soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A β peptide" or "in need of reduction of plaque deposits," respectively. Support for the addition of the phrases "to a patient in need of reduced levels of A β peptide" or "to a patient in need of reduction of plaque deposits," can be found in the specification in, *e.g.*, Example 6, as discussed above in

Section IV. *See* specification, page 21, line 17, to page 22, line 16. Further, in an effort to facilitate prosecution, and not in acquiescence to the Examiner's objection, Applicants have also amended claim 42 to recite a "method of treating a disease, disorder, or condition."

Therefore, as discussed above in Section IV, contrary to the Examiner's assertions, claims 42 and 52, as currently presented, are drawn to methods of treating a disease, disorder, or condition. Further, claims 42 and 52, as currently presented, do define the patient population, as they are drawn to methods of treating the disease, disorder, or condition comprising administering a therapeutically effective amount of a soluble Nogo receptor-1 polypeptide *to a patient in need of reduced levels of A β peptide or to a patient in need of reduction of plaque deposits*. Strittmatter does not expressly or inherently disclose the administration of a soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A β peptide or to a patient in need of reduction of plaque deposits.

Under 35 U.S.C. § 102, a claim can only be anticipated if each and every element in the claim is expressly or inherently disclosed in a single prior art reference. *See Kalman v. Kimberly Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). As discussed above, Strittmatter does not expressly or inherently disclose every element of the presently claimed invention. Hence, under *Kalman*, this reference cannot support a rejection under 35 U.S.C. § 102(e) and (a). Reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(e) and (a) over Strittmatter are therefore respectfully requested.

VI. The Rejection over Lee Under 35 U.S.C. § 103(a) is Traversed

At pages 9-13 of the Office Action, claims 42-47, 49-56, and 58-60 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Lee. *See* Office Action, pages 9-13. Applicants respectfully disagree.

The factors to be considered under 35 U.S.C. § 103(a), are the scope and content of the prior art; the differences between the prior art and the claims at issue; and the level of ordinary skill in the pertinent art. *See Graham v. John Deere*, 383 U.S. 1, 17 (1966); MPEP § 2141. This analysis has been the standard for 40 years, and remains the law today. *See KSR Int'l Co v. Teleflex Inc.*, 550 U.S. 398, 415 (2007). The Office has recently published Examination Guidelines to aid Examiners in formulating obviousness rejections. *See Examination Guidelines for Determining Obviousness under 35 U.S.C. 103 in view of the Supreme Court decision in KSR International v. Teleflex Inc.* Fed. Reg. Vol. 72, pp. 57526 to 57535 (October 10, 2007), hereinafter "the Examination Guidelines." Seven rationales are suggested by which obviousness may be found, *e.g.*, by combining elements in the art or substituting one known element for another. As a common thread through all the rationales, the Examiner must establish on the record that a person of ordinary skill in the art would have recognized that the results of the combination or substitution were *predictable*. *Id.*, *e.g.*, at 57529.

The Examiner has not met the burden of establishing a *prima facie* case of obviousness based on the Examination Guidelines. Specifically, the Examiner has not established that the ordinary artisan reading Lee would predictably arrive at claims 42 and 52, as currently presented, which are drawn to methods of treating a disease, disorder, or condition comprising administering a therapeutically effective amount of a

soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A β peptide or to a patient in need of reduction of plaque deposits. As discussed above, Lee does not expressly or inherently disclose the administration of a soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A β peptide or to a patient in need of reduction of plaque deposits.

Furthermore, Lee does not suggest a method of treating a disease, disorder, or condition by reducing the levels of A β peptide in a mammalian brain or a method of treating a disease, disorder, or condition associated with plaques of A β peptide in a mammalian brain, comprising administering a therapeutically effective amount of a soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A β peptide or to a patient in need of reduction of plaque deposits, respectively. As the Examiner correctly points out, the methods of Lee include promoting survival of a neuron at risk of dying, which does not teach or suggest the presently claimed invention.

Moreover, there is nothing in Lee to suggest a relationship between Nogo receptor and A β peptide or its precursor protein (APP, amyloid precursor protein), as Lee is directed to, *inter alia*, the interaction between Nogo receptor and Nogo ligand. *See, e.g.*, Lee, page 1, paragraphs [0007] and [0009]. Lee does not suggest treating a disease, disorder, or condition by reducing the levels of A β peptide or reduction of plaque deposits through the Nogo receptor-A β peptide and/or Nogo receptor-APP interaction. One of ordinary skill in the art reading Lee would not have appreciated that Nogo receptor and A β peptide or APP even interact, because Applicants were the first to elucidate and characterize this relationship. *See, e.g.*, specification, page 17, line 10, through page 22, line 16 (Examples 1-6).

Therefore, the ordinary artisan reading Lee would not have predictably arrived at claims 42 and 52 as currently presented. Thus, for at least the foregoing reasons, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness as set out in the Examination Guidelines. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) over Lee are therefore respectfully requested.

VII. The Rejection on the Ground of Nonstatutory Obviousness-Type Double Patenting is Traversed

At pages 13-14 of the Office Action, claims 42-44, 47, 49-50, 52-53, 56, and 58-59 have been rejected on the ground of nonstatutory obviousness-type double patenting over claims 1 and 7-9 of U.S. Patent No. 7,465,705 ("the '705 patent"). *See* Office Action, pages 13-14. The Examiner has alleged that practicing claims 7-9 of the '705 patent, one of ordinary skill in the art would necessarily achieve the claimed invention and vice versa, because the patient population is not defined. *Id.* at page 14, paragraph 30. Applicants respectfully disagree and traverse this rejection as it applies to the present claims.

Nonstatutory obviousness-type double patenting is analogous to a failure to meet the nonobviousness requirement of 35 U.S.C. § 103 except that the patent underlying the double patenting rejection is not considered prior art. *In re Braithwaite*, 379 F.2d 594, 600 n.4 (C.C.P.A. 1967). An obviousness-type double patenting analysis generally parallels the guidelines for analysis of a 35 U.S.C. § 103 obviousness determination. *See* *In re Braat*, 937 F.2d 589 (Fed. Cir. 1991); *see also* *In re Longi*, 759 F.2d at 895-96; MPEP § 804. Since the analysis employed in an obviousness-type double patenting

determination generally parallels the guidelines for a § 103(a) rejection, the factual inquiries that are applied in determining obviousness under § 103, *see Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), are generally employed when making an obviousness-type double patenting analysis. In *Graham*, the Supreme Court instructed that

[u]nder § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

383 U.S. at 17.

Importantly, one may not use the specification of the reference patent as "prior art" in the obviousness analysis. *In re Vogel*, 442 F.2d 438, 441-42 (C.C.P.A. 1970). Only the claims, not the full disclosure, of both the cited reference case and the potentially rejected case (case at issue) may be considered, although supporting disclosures may be relevant for interpreting the scope and meaning of the reference and rejected claims. *Id.*; *see also In re Avery*, 518 F.2d 1228, 1232 (C.C.P.A. 1975); *In re Zickenhardt* 319 F.2d 225, 228 (C.C.P.A. 1963). Thus, one cannot combine the earlier claim of the reference patent with a teaching in the specification of that reference patent to show that the later claim is obvious over the earlier claim.

Applicants respectfully assert that none of the claims of the '705 patent render obvious the currently claimed invention. Specifically, the methods of claims 7-9 of the '705 patent are directed to inhibiting growth cone collapse of a neuron, decreasing the inhibition of neurite outgrowth or neurite sprouting in a neuron, and promoting survival of a neuron at risk of dying. In contrast, and as discussed above, the methods of the presently claimed invention are directed to methods of treating a disease, disorder, or

condition by reducing the levels of A_β peptide in a mammalian brain or to methods of treating a disease, disorder, or condition associated with plaques of A_β peptide in a mammalian brain. Furthermore, present claims 42 and 52 define the patient population, as they are drawn to methods of treating the disease, disorder, or condition comprising administering a therapeutically effective amount of a soluble Nogo receptor-1 polypeptide *to a patient in need of reduced levels of A_β peptide or to a patient in need of reduction of plaque deposits*. Therefore, it would not have been obvious from claims 7-9 of the '705 patent to administer a therapeutically effective amount of a soluble Nogo receptor-1 polypeptide to a patient in need of reduced levels of A_β peptide or to a patient in need of reduction of plaque deposits. Thus, the claims of the '705 patent do not render obvious the methods of the presently claimed invention. Reconsideration and withdrawal of the rejection on the ground of nonstatutory obviousness-type double patenting over claims 1 and 7-9 of the '705 patent are therefore respectfully requested.

VIII. Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Shannon A. Carroll, Ph.D.
Attorney for Applicants
Registration No. 58,240

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1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

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